

IN THE SPECIFICATION

Please amend the paragraph on page 25, lines 4–18 as follows:

The data in the table demonstrates the effect of powder particle size on the mechanical characteristics of the extruded material. The resin precursor powder was prepared using 5 parts hexamine at a cure temperature of 150C using the ramped cure technique as described in ~~example~~ Example 1. After curing the resin was hammer milled and sieved to provide the particle size fractions used in the example. The extrusion dough and the extrudates were formulated as in ~~example~~ Example 1. The dried green extrudate was carbonised as in ~~example~~ Example 1. The data in ~~table~~ Table 2 demonstrate the variation in crush strength with the resin particle size. It can be seen that, based on the target strength of 5Kg, particle sizes of less than ~~180microns~~ 180 microns give marginally acceptable products although they are all much weaker than would be expected from the smaller resin particles of ~~example~~ Example 1 when prepared using the 5part hexamine formulation and the ramp cure process. Extrudates prepared using particle sizes larger than 180 microns gave very poor strengths and unacceptable extrudates. Based on this data the most preferred cured resin particle size is less than 70 microns and the required cured ~~resin-particle~~ resin particle size is less than ~~180microns~~ 180 microns.

Please amend the paragraph on page 26, lines 4–16 as follows:

The extruded materials of ~~examples~~ Examples 1 and 2 were compared with pelleted resins made from the same cured precursors as in ~~example~~ Example 1 using curing temperatures of 130, 140 and 150C, 3 parts hexamine and either the flash or ramp cure process. The resulting blocks were hammer milled and the ~~75-125micron~~ 75-125 micron fraction was separated by sieving. The remaining material was then jet milled using a Hozakawa 100AFG

mill to provide the ~70 micron cured resin powder. The powders were then pelleted either as the straight powder or using polyethylene glycol as a lubricant and in one case with additional hexamine curing agent. The pelleting was carried out in a single pellet die using a hydraulic press to pressures of 100 or ~~150 bar~~ 150 bar to produce 7mm diameter green pellets. These were then carbonized as in ~~example~~ Example 1. The crush strength of the carbonized pellets was determined as in ~~example~~ Example 1. This preparation route is comparable with the procedures in EP 0 254 551.

Please amend the paragraph on page 26, lines 18–19 as follows:

The results, shown in ~~table~~ Table 3, demonstrate the marked difference between the pelleting process and the extrusion process of the current invention.

Please amend the paragraph on page 27, lines 6–13 as follows:

Comparison with the extrudate results in ~~table~~ Table 1 demonstrates that whilst improved pellets were always produced using the ramp cured material, in agreement with the extrudate data, acceptable strength pellets could only be produced using resin cured at 140C and less, and that at 140C this was only possible using the ramp cure at the highest pelleting pressures. The optimum cure for the pelleted materials was 130C. This is in marked contrast to the extruded materials where production at 130C lead to distortion on firing and the preferred cure condition was 140 or 150C, with even 160C giving acceptable materials.

Please amend the paragraph on page 29, lines 12–14 as follows:

A monolith was formed by the method of ~~example~~ Example 1. This monolith was activated at 900C in flowing carbon dioxide for 1 hour which gave a material with a BET surface area of approximately 800m²/g.

Please amend the paragraph on page 30, line 27 to page 31, line 4 as follows:

The application of the monoliths in vehicle cabin air filtration was examined using a feed gas stream comprising auto-exhaust diluted 50% with air. This was passed through the 31mm diameter by 620mm long monoliths made by the method of ~~example~~ Example 1 at 5L/minute that had been pre-aged in humid air for several weeks prior to use. The results in ~~table~~ Table 4 show that there was effectively total removal of all contaminants (to below 1ppb) from feed levels as high as 4ppm for toluene.

Please amend the paragraph on page 33, lines 5–13 as follows:

The standard dough formulation, as described in ~~example~~ Example 4, was used to extrude monoliths with an outside diameter of approximately 10mm and a green cell density of 44cpc and a carbonised cell density of 9lcpc. After carbonisation the monoliths ~~has~~ have an OD of 7.3mm. The pressure drop through the resin monoliths as a function of monolith length and a short segment of the carbonised monoliths was determined and is shown in ~~figure~~ Figure 10. The results have been normalized to the pressure drop through 1cm cross section and 1cm length to allow a direct comparison. It can be seen that the resistance to flow increases as the length decreases reflecting the higher pressure drop at the entrance to the monoliths due to turbulence.

Please amend the paragraph on page 33, lines 16–27, as follows:

The low pressure drop of the monolith structures and their enhanced adsorption potential can be made use of in a novel gas mask configuration. Figure 11 shows a conventional military gas mask with the large canister (10) attached to the side. These canisters present a significant physiological load to the wearer due to their pressure drop and are also inconvenient. A new design of mask based on the low pressure drop small diameter monoliths of ~~example~~ Example 8 is shown Figure 12. This comprises a “flat pack” of monoliths (11) attached to either side of the face mask. This design will allow a lower pressure drop, reducing the physiological impact of the mask, combined with greater convenience and capacity. A possible structure for the “flat pack” is shown in Figure 13 in which a series of monoliths (21) are packed flat in container (14). Air is breathed through inlet (22), passes through manifold (15) into monoliths (21) and through outlets (33) into the mask.